



TOSHIBA

The power to open people's eyes

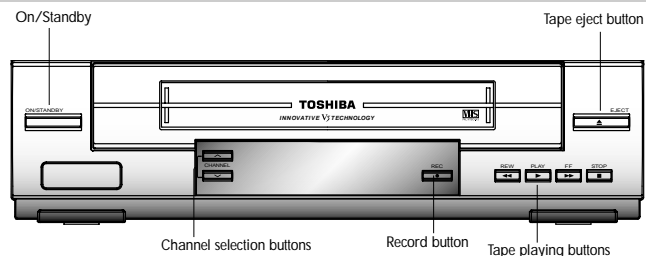
V631UK

Owners Manual

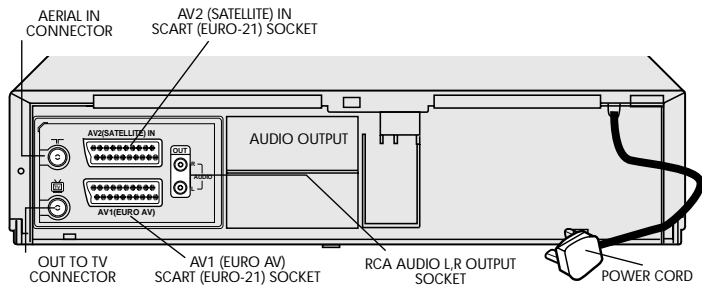
GENERAL INFORMATION

General Identification of the VTR Controls

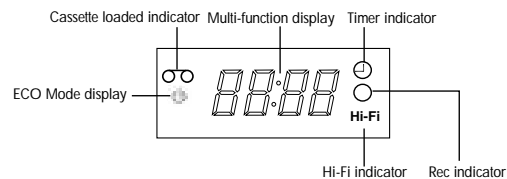
Front Controls:



Rear Connections:



Front Display Panel:

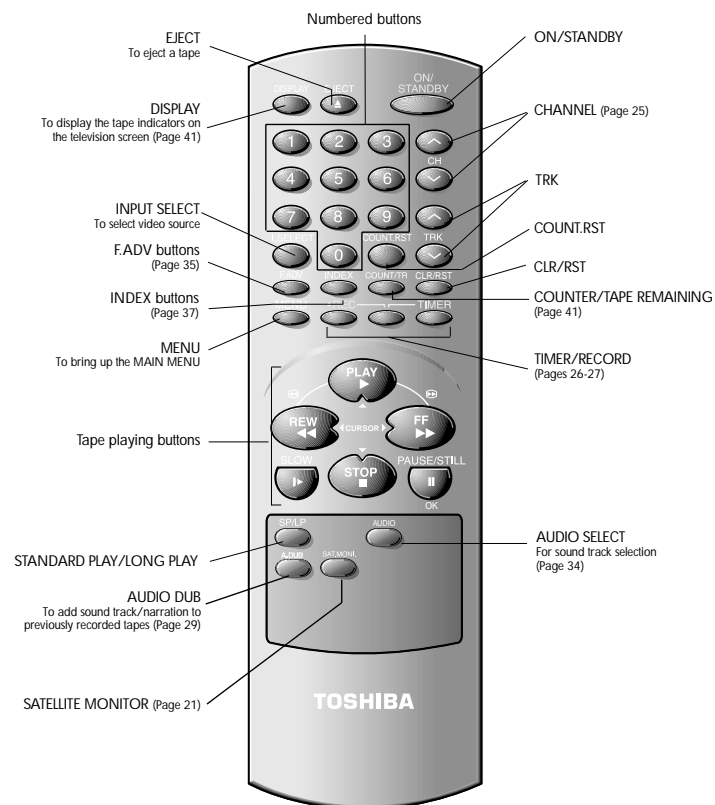


GENERAL INFORMATION

Your Remote Control

The illustration below is to show a quick guide to the Remote Control. Detailed instructions occur throughout the book.

At a Glance:



2. Reference Information

2-1 Operation of Controls

66 GENERAL INFORMATION

Preparing your Remote Control

The Remote Control handset is needed to operate your new Toshiba video recorder. If used correctly, it should give years of trouble-free use. Please take good care of it, always observing the correct polarities when replacing the batteries.

Batteries:

Carefully open the battery compartment on the rear of the Remote Control by gently pushing on the arrow and sliding in that direction.

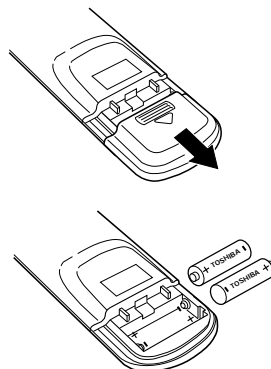
Insert both batteries taking care to fit them the right way round (+ and -).

The 2 Toshiba batteries supplied are Cadmium- and Mercury-free (UM-4, AAA, IECRO3, 1.5v).

Replace the cover of the battery compartment. By sliding in the opposite direction to the arrow.

CAUTION:

DO NOT throw your batteries into a fire.
Dispose of your batteries in a designated disposal area.
DO NOT mix an old battery with a new one.
DO NOT mix battery types.



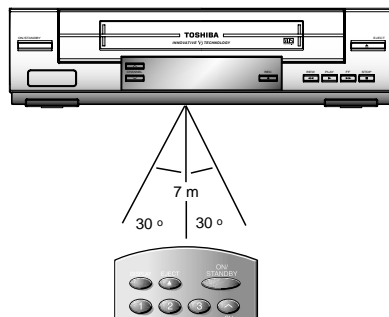
Caring for the Remote controller

- When using the Remote Control, press the buttons at intervals of about 1 second to ensure the correct mode of operation.
- Keep the Remote Control away from extremely hot or humid places and avoid sharp impacts.
- Do not expose the remote sensor of the VTR to a strong light source such as direct sunlight or illumination (especially high-frequency lighting) when using the remote control.
- Be careful not to spill water on the Remote Control or to place it on anything wet.

Effective Range for the Remote Control:

For optimum performance your Remote Control will operate within a distance of 7 metres and up to 30° from the central position.

If the Remote Control does not work, press the VTR button and make sure the batteries are in good working order.



66 CONNECTIONS






Connecting your VTR

You must take into account various factors when connecting audio or video system :

- Types of connectors available on your systems
- Systems connected permanently to the VTR (satellite receiver for example) or temporarily (camcorder for example)

Deciding how to connect your VTR

Your VTR is equipped with the following connector.

Connectors	Location	Type	Direction	Recommended Use
AV1	Rear 	SCART	In/Out	<ul style="list-style-type: none"> • Television • Other VTR
AV2	Rear 	SCART	In/out	<ul style="list-style-type: none"> • Decoder for scrambled Pay TV broadcasts Example: CANAL+ • Other VTR
Audio output	Rear 	Audio RCA	Out	<ul style="list-style-type: none"> • Audio Hi-Fi system
OUT TO TV	Rear 	75Ω coaxial	Out	<ul style="list-style-type: none"> • Television
IN FROM ANT.	Rear 	75Ω coaxial	In	<ul style="list-style-type: none"> • Aerial • Cable television network

Important:

Whenever you connect an audio or video system to your VTR, ensure that all element are switched off. Refer to the documentation supplied with your equipment for detail connection instructions and associated safety precautions.

CONNECTIONS

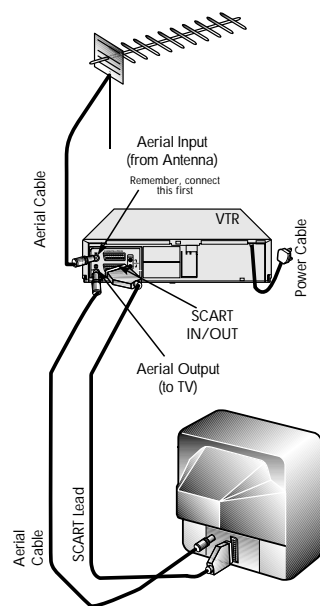
Connecting your VTR continued

To receive television programmes a signal must be received from one of the following sources:

- An outdoor aerial
- An indoor aerial
- A cable television network

Connecting your VTR to the TV using the coaxial cable and SCART cable

Make sure that both the television and the VTR are switched off before connecting the cables.



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- 1 Remove the aerial or network input cable from the television.
- 2 Connect this cable to the 75Ω coaxial socket market on the rear of your VTR.
- 3 Plug the coaxial cable supplied into the socket on your VTR.
- 4 Plug the other end of the coaxial cable into the connector previously used for the aerial on the television.
- 5 To obtain better quality pictures and sound on your television, you can also connect your VTR to the television via the SCART cable if your television is equipped with this type of connection. Connect one end of the SCART cable to the AV1 (EURO AV) socket on the rear of the VTR.
- 6 Plug the other end into the appropriate connector on the television.

CONNECTIONS

Connecting your VTR continued

This VTR is fully equipped to receive scrambled Pay TV broadcasts.

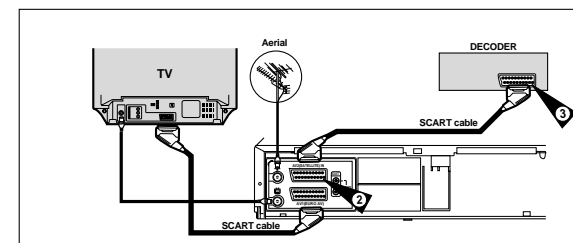
Example: CANAL+ or premiere broadcast.

Connecting a Decoder for scrambled PAY TV broadcasts

You can :

- Record a scrambled programme while watching another channel
- Record another channel while watching a scrambled programme

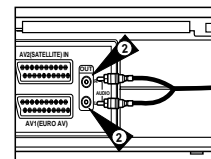
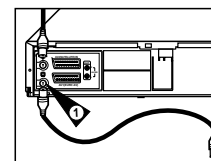
- 1 Connect the VTR to the television as indicated on page 8.
- 2 Plug the SCART cable with the decoder into the AV2 (SATELLITE) IN socket on the rear of the VTR
- 3 Plug the other end in to the decoder.



Connecting the Audio Output Cable

You can connect your VTR to a Hi-Fi system.

Example: You wish to take advantage of the quality of your Hi-Fi stereo system when watching a programme or recording via your VTR.



- 1 Connect the coaxial cable or SCART as indicated on page 8.
- 2 Plug the audio output cable into the the audio connectors on the rear of your VTR.
Note : Respect the colour coding of the left and right channels.
- 3 Plug the other end of the audio cable into the appropriate input connectors on your Hi-Fi stereo system.

Important:

- Regardless of the type of connection chosen, you must always connect the coaxial cable supplied. Otherwise, no picture will be visible on the screen when the VTR is switched off.
- Make sure that both the television and the VTR are switched off before connecting the cables.

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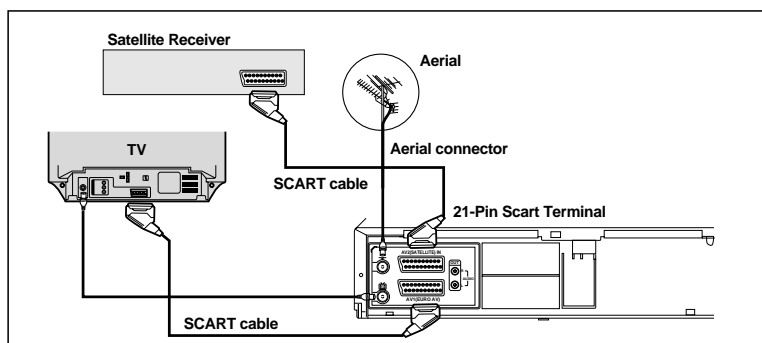
CONNECTIONS

Satellite Receiver

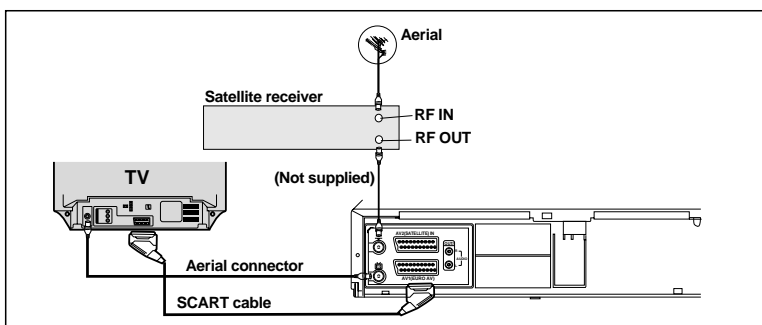
This VTR can be connected to your satellite receiver and you can enjoy watching or recording satellite programmes through the VTR.

Connecting a Satellite Receiver

By means of 21-pin SCART cable:
If both your TV and Satellite receiver have a SCART, use a SCART cable (not supplied) to connect the VTR.



By means of RF Coaxial Cable:
After making this connection, you must preset the station received through the satellite tuner. And proceed with the satellite setting.

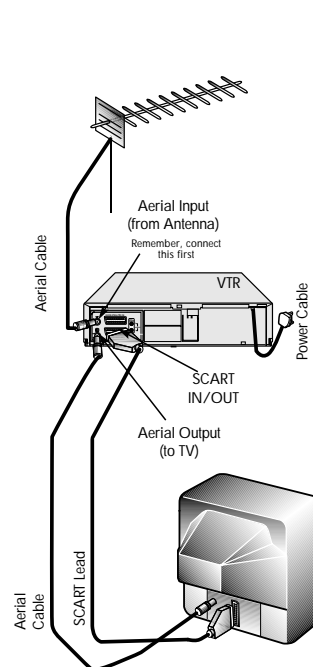


CONNECTIONS

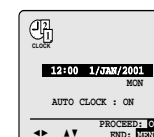
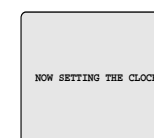
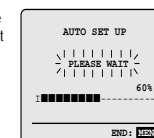
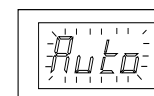
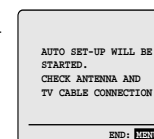
Plug & Auto Set Up

Your VTR will automatically set itself up when it is plugged into the mains for the first time. TV stations will be stored in memory. The process takes a few minutes. Your VTR will then be ready for use.

Plug & Auto Set Up



- 1 Connect the coaxial cable.
- 2 Plug the VTR into the mains. A message appears "AUTO SET-UP WILL BE STARTED. CHECK ANTENNA AND TV CABLE CONNECTION".
- 3 The process will finish after a few minutes. Then the date and time are set automatically from the broadcast signal, but this function will not operate if there is no teletext signal.



CONNECTIONS

Tuning your Television for the VTR

You must tune your television for the VTR only if you are not using a Scart cable.

Tuning your television for the VTR

Note: To view pictures from your VTR when a Scart cable is used, the television must be set to the audio/video mode (AV).



- 1 Switch on the television.
- 2 Switch on the VTR by pressing ON/STANDBY on the front of the VTR or on the remote control.
- 3 Select a programme position on the television to be reserved for used with your VTR.
- 4 Insert the video cassette in the VTR. Check that the VTR starts reading the cassette; press PLAY (▶) button.
- 5 Start a scan on your television or set the television to UHF channel 36.
- 6 Fine tune the television until the pictures and sound are obtained clearly.
- 7 If you cannot find the pictures and sound, or there is interference from nearby channels, it may be necessary to change the setting of the VTR output channel (see Solving Problems section of this manual).
- 8 When the picture and sound are perfectly clear, store this channel at the desired programme position on the television.
Result : That programme is now reserved for use with your VTR.

GETTING STARTED

Setting up your VTR

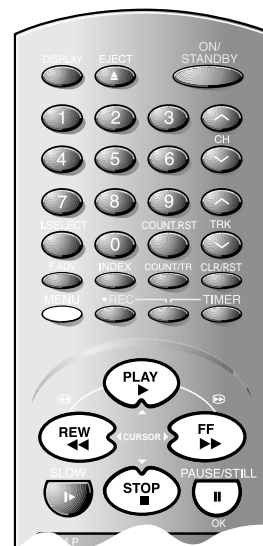
Your VTR contains a 24-hour clock and calendar used to:

- Automatically stop programme recording
- Preset your VTR to record a programme automatically

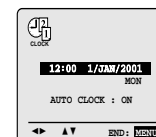
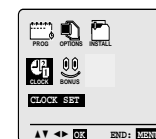
Setting the date and time

Note: You must set the date and time when:
You purchase the video cassette recorder

- The date and time are set automatically from the broadcast signal, but this function will not operate if there is no teletext signal.
- Do not forget to reset the time when you change clocks from winter to summer time and vice versa.



- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **CLOCK SET** option.
- 3 Press the OK button to select this option.
Result : The **CLOCK SET** menu is displayed.
- 4 Press ◀ or ▶ to select the hour, minutes, day, month and year.
Result : The option selected flashes.
- 5 Press the ▲ or ▼ button to increase or decrease the value.
Result : The day of the week is displayed automatically.
Note : You can hold the ▲ or ▼ buttons down to scroll more quickly through the values.
- 6 On completion, press MENU twice to exit the menu.



GETTING STARTED

Displaying/Hiding On-Screen Information

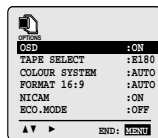
Your VTR displays most information both on the VTR and the television. You can choose to display or hide this information on the television screen (except for the Index, Programming MENU, which cannot be hidden).

Displaying/Hiding On-Screen Information

GETTING STARTED



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press the OK button to select this option.
Result: The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **OSD** option is selected.
- 5 To...
Display on-screen information Press ◀ or ▶, until...
Hide on-screen information **ON** is displayed.
OFF is displayed.
- 6 On completion, press MENU twice to exit the menu.



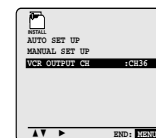
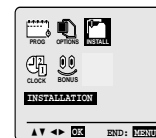
GETTING STARTED

Installation

Your VTR output channel may need to be changed if the pictures suffer from interference or if your TV cannot find the pictures. Also, you can change the VTR output channel to adjust the frequency in which information is displayed on the screen.

Setting the VTR output channel

- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **INSTALLATION** option.
- 3 Press the OK button to select this option.
Result: The **INSTALLATION** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **VCR OUTPUT CH** option is selected.
- 5 Select the required output channel (CH21-CH69) by pressing the ◀ or ▶ buttons.
- 6 On completion, press MENU twice to exit the menu.
Then tune your television again (see page 12)



GETTING STARTED

Installation continued

You do not need to preset the stations if you have already set them automatically (see Plug & Auto Set Up)

Presetting the stations automatically

Your VTR contains a built-in tuner used to receive television broadcasts.

You must preset the stations received through the tuner. This can be done:

- Plug & Auto Set up (see page 11)
- Automatically
- Manually (see page 17)

GETTING STARTED



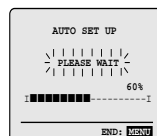
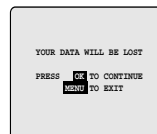
NOTE:

- ♦ The time and date are set automatically from the broadcast signal. If the signal is weak or ghosting occurs, the time and date may not be set automatically. In this case, they should be set manually (see page 13).
- ♦ Once the auto scanning procedure has finished, some stations may have been stored more than once; select the stations with the best reception and delete the ones no longer required (see page 19)

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Note : To enable the VTR to decode a scrambled TV station, the decoder must be activated after the scan (see pages 18).

- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ button to select the **INSTALLATION** option.
- 3 Press the OK button to select this option.
Result : The **INSTALLATION** menu is displayed.
- 4 Press the corresponding ▲ or ▼ button, until the **AUTO SET UP** option is selected. And then press the ▶ button to select this option.
Result : A message appears, indicating that any channels already preset on your VTR will be deleted.
- 5 Press OK to start the auto scanning.
Result : ♦ The **PLEASE WAIT** indication flashes on the television screen.



- ♦ The first frequency band is scanned and the first station found is displayed and stored.
- ♦ The VTR then searches for the second station and so on.
- ♦ When the automatic scanning procedure has finished, the VTR switches automatically to programme.

Note : The number of stations automatically stored by the VTR depends on the number of stations that it has found (reception conditions, etc)

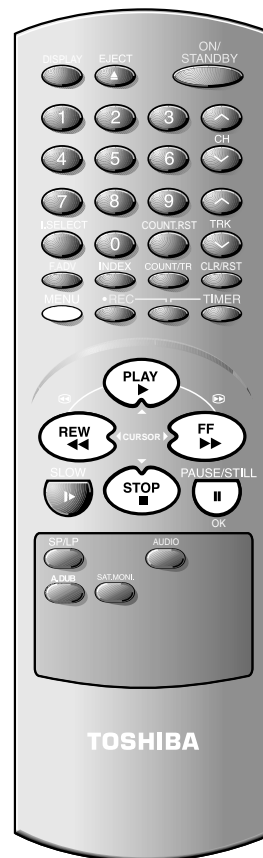
- 6 If you wish to cancel the auto scanning before the end, press the MENU button three times to exit the menu.

GETTING STARTED

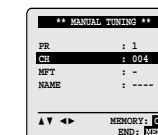
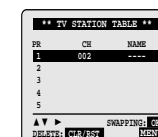
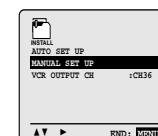
Installation continued

You do not need to preset the stations manually if you have already set them automatically.

Presetting the stations manually



- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **INSTALLATION** option.
- 3 Press the OK button to select this option.
Result : The **INSTALLATION** menu is displayed.
- 4 Press the ▲ or ▼ buttons, until the **MANUAL SET UP** option is selected.
- 5 Press the ▶ buttons to select this option.
Result : The **TV STATION TABLE** menu is displayed.
- 6 Press the ▲ or ▼ button to select a programme number as required.
- 7 Press the ▶ button to preset the station.
Result : The **MANUAL TUNING** menu is displayed.



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GETTING STARTED

Installation continued

Presetting the stations manually



- 8 Press ◀ or ▶ button to start scanning.
Result : The frequency band is scanned and the first station found is displayed.
If you know the number of the channel you want, press the numeric buttons on the remote control for example, for channel E21, first press "0" and then press "2", "1" (see page 42).
- 9 Press the ▲ or ▼ button to select **MFT**. This is useful when the channel scanned is not clear. Press ◀ or ▶ button to adjust for clear signal reception.
- 10 Press the ▲ or ▼ button until **NAME** is selected.
The station name is set automatically from the broadcast signal.
- 11 To change the programme's name, press the ▶ button.
Result : The first letter of the name flashes.
- 12 To...
Select a character in the name
Then...
♦ Press the ▲ or ▼ button until the required character is displayed. (letter, numbers or "." character).
Move to the next or previous character
♦ Press the ◀ or ▶ button respectively,
- 13 If you...
Wish to store the stations displayed
Then...
♦ Press the corresponding ▲ or ▼ button, until the **MFT** is selected.
♦ Press the ◀ or ▶ buttons to adjust the picture, if necessary.
♦ Press OK to store the station.
♦ Press the corresponding ▲ or ▼ button, until the **CH** is selected.
♦ Press the ◀ or ▶ button to go on scanning the frequency band and display the next station.
♦ Go back to the beginning of step 14
- 14 Repeat this procedure from step 6 onward, until all the required stations have been stored.
- 15 On completion, press the MENU button three times to exit the menu.

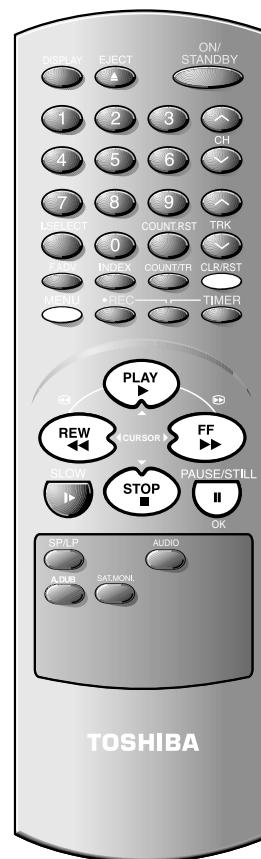
Note: To enable the VTR to decode a scrambled TV station, the decoder must be switched on

GETTING STARTED

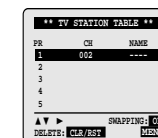
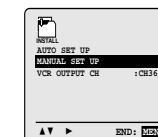
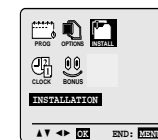
Clearing a Preset Station

If you have stored a TV stations:
 • That you do not require
 • At the wrong programme position
 You can cancel it

Clearing a preset station



- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **INSTALLATION** option.
- 3 Press the OK button to select this option.
Result : The **INSTALLATION** menu is displayed.
- 4 Press the ▲ or ▼ buttons to select **MANUAL SET UP** option.
- 5 Press the ▶ buttons to select this option.
Result : The **TV STATION TABLE** menu is displayed.
- 6 Press the corresponding ▲ or ▼ buttons, until the required preset TV station is selected. (PR)
- 7 Press the CLR/RST button.
- 8 Repeat the same procedure from step 6 onward until all the required stations have been cleared.
- 9 On completion, press MENU three times to exit the menu.



GETTING STARTED

Changing the Preset Station Table



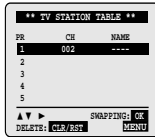

You can rearrange the preset TV stations according to your own preferences programme number assigned to the station.

Changing the preset station table

GETTING STARTED



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- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **INSTALLATION** option.

- 3 Press the OK button to select this option.
Result: The **INSTALLATION** menu is displayed.
- 4 Press the ▲ or ▼ buttons to select **MANUAL SET UP** option. And then press the ▶ button to select this option.
Result: The **TV STATION TABLE** menu is displayed.
 
- 5 Press the corresponding ▲ or ▼ buttons, until the required preset TV programme is selected.
Result: The selected station is displayed at the same time on the television screen.
- 6 To change the programme number assigned to station press the OK button on the remote control. (For example, To move a TV station in programme 1 to programme 3)

- 7 Press the ▲ or ▼ button to select required position. And then press OK again to swap the position.
- 8 You can modify this station by repeating the same procedure from step 5 onwards.
- 9 On completion, press the MENU button three times to exit the menu.

GETTING STARTED

Satellite Monitor Functions

For satellite receiver with only ONE SCART socket:

If the satellite receiver has only one Scart output, Connect it to the BLUE input socket on the VTR. Use another Scart lead to connect the AV1 (EURO AV) socket on the VTR to the TV

Satellite monitor functions

If the Satellite receiver has two SCART outputs, one to the VTR and another to the TV, you do not need to use this function.

Note: To view satellite when video is in standby or (not ECO.MODE) recording a television station:



- 1 Press the SAT.MONI. button on the remote control once to select the AV2 (SATELLITE) IN scart. This will loop the satellite signal through the VTR up to the television.
- 2 If it has not been automatically selected, select the SCART socket on the television. (refer to TV Owner's Manual)
- 3 To cancel press the SAT.MONI. button again.
Note: If you press MENU on the remote control the Satellite Monitor function will be canceled.

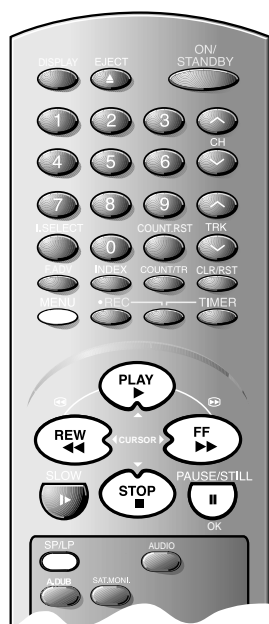
21

RECORDING

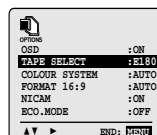
Recording Television Broadcast

If you wish to use the tape counter to display the time remaining on a cassette, you must indicate the type of cassette inserted.

Selecting the cassette type



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press the OK button to select this option.
Result: The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **TAPE SELECT** option is selected.
- 5 Press the ◀ or ▶ buttons as many times as required, until the correct cassette length is displayed.
E180 → E240
E300 ← E260 ←
- 6 Press MENU twice to exit menu



Selecting the record speed

You can record a cassette at two different speed:

- ♦ SP (Standard Play)
- ♦ LP (Long Play)

In long Play modes:

- ♦ Each cassette lasts twice as long
- ♦ The recording is of a slightly lower quality

To record a cassette...

Press the SP/LP button on the remote control, until...

In stander play mode
In long Play

SP is displayed.
LP is displayed.

Type	Recording Time (in SP)
E-180	180 mins. or 3 hours
E-240	240 mins. or 4 hours
E-260	260 mins. or
	4 hours and 20 mins.
E-300	300 mins. or 5 hours

RECORDING

Recording Television Broadcast

continued

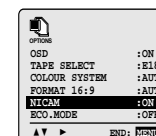
NICAM

NICAM programme are divided into 3 types. NICAM Stereo, NICAM Mono and Bilingual (transmission in another language). NICAM programmes are always accompanied by a standard mono sound broadcast and you can select the desired sound. Please refer to page 34).



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press the OK button to select this option.
Result: The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **NICAM** option is selected.
- 5 To...
Mono

NICAM mode
- 6 On completion, press MENU twice to exit the menu.



Press ◀ or ▶, until...
OFF is displayed.
OFF: Only set at this position to record the standard mono sound during a NICAM broadcast if the stereo sound is distorted due to inferior reception conditions.
ON is displayed.
ON: Normally set at this position.

RECORDING

Protecting a Recorded Cassette

Video cassettes have a safety tab to prevent accidental erasure. When this tab has been removed, you cannot record on the tape.

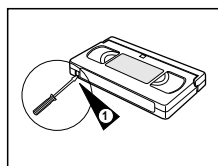
Protecting a Recorded Cassette



Note:

- ♦ If the cassette is ejected when you start recording, check that the safety tab is intact or the opening is covered with adhesive tape.
- ♦ If you reach the end of the tape while recording, the cassette rewinds automatically.

- 1 If you wish to protect a cassette, break off the tab using a small screwdriver.
- 2 To re-record over a protected cassette (safety tab broken), cover the hole with adhesive tape.



Recording a Programme Immediately

Before recording a programme, you must have preset the corresponding station (unless you are recording via an external video source). If you have not done so, refer to pages 16 and 17.

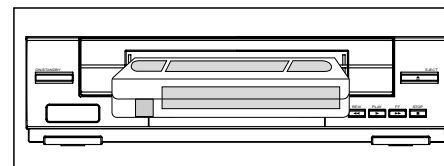
- 1 Switch on the television.
- 2 To monitor the programme being recorded, select the television channel reserved for use with your VTR (or the AV input if used).
- 3 Insert the cassette on which the programme is to be recorded, with the window visible and the safety tab intact or the opening covered with adhesive tape.
Result: The VTR is switched on automatically
- 4 Select:
 - ♦ The station to be recorded using the CH (▲ or ▼) buttons
 - or
 - ♦ The AV1 or AV2 source using the I.SELECT buttons for a satellite tuner or external video source**Result:** The station number is displayed and the programme can be seen on the television.
- 5 Select the recording speed (SP/LP) by pressing the SP/LP button as many times as required (see page 22).
- 6 Press two REC buttons on the remote control or REC button on the front of the VTR.
Result: The record indicator appears on the television and VTR display. An index is recorded on the tape (see page 37).
- 7 To stop recording, press STOP (■) once.

RECORDING

Recording a Programme with Automatic Stop

Recording a Programme with Automatic Stop

This function enables you to record up to nine hours of programmes. (LP)
Your VTR stops automatically after the requested length of time.



Note: If the end of the tape is reached while recording:
 ♦ The recording stops
 ♦ The VTR automatically turns off

- 1 Switch on the television.
- 2 To monitor the programme being recorded, select the television channel reserved for use with your VTR (or the AV input if used)
- 3 Insert the cassette on which the programme is to be recorded, with the window visible and the safety tab intact or the opening covered with adhesive tape.
Result: The VTR is switched on automatically.
- 4 Select:
 - ♦ The station to be recorded using the CH (▲ or ▼) buttons
 - or
 - ♦ The AV1 or AV2 source using the I.SELECT buttons for a satellite tuner or external video source**Result:** The station number is displayed and the programme can be seen on the television.
- 5 Select the recording speed (SP/LP) by pressing the SP/LP button as many times as required (see page 22).
- 6 Press two REC buttons on the remote control or REC button on the front of the VTR.
Result: The record indicator appears on the television screen and the VTR display. An index is recorded on the tape (see page 37).
- 7 Press the REC button (●) several times to increase the recording time in
 - ♦ 30-minute intervals up to four hours
 - ♦ 1-hour intervals up to nine hours (LP)**Result:** The length is displayed on the television displays. The selected programme is recorded for the length of time requested. At the end of that time, the VTR stops recording automatically.
- 8 If you wish to cancel the recording before the end, press ON/STANDBY.

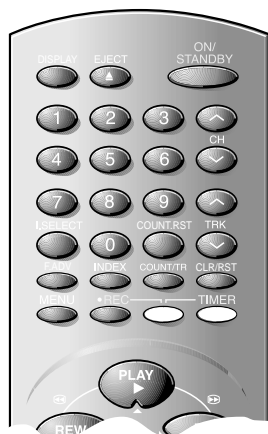


RECORDING

Using the TIMER Programming Feature

The TIMER Programming feature allows you to preset the VTR to record a programme up to one month before that programme is to be broadcast. Up to six programmes can be preset.

Using the TIMER Programming Feature



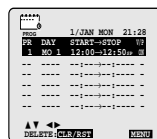
RECORDING

Note: Auto Tape Speed Select

The VTR's Auto Tape Speed Select* function compares the duration of the timer recording to the actual recording time remaining on the tape loaded. If there is insufficient tape to complete a timer recording in AUTO mode, the VTR automatically switches to LP mode to record the whole programme.

E.g. If there is a one hour Timer recording in AUTO mode to be started, and only 40 minutes tape remaining, the VTR will record in SP for 20 minutes and switch to complete the remaining 40 minutes in LP mode.

- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the OK button to select this option.
Result: The **TIMER PROGRAMMING** menu is displayed.
- 3 Press ► to select the input source.
- 4 Select the required station by pressing the ▲ or ▼ button or I.SELECT to select the AV1 or AV2 input sources.
- 5 Press ► to select the recording day.
- 6 Select the required day by pressing the ▲ or ▼ button.
- 7 Press ► to select the recording start time.
- 8 Select the required hour value by pressing the ▲ or ▼ button.
- 9 Press ► to select the minutes.
- 10 Select the required minute value by pressing the ▲ or ▼ button.
- 11 Press ► to select the recording end time.
- 12 Select the required recording end time by pressing the ▲ or ▼ button, following the same procedure as when selecting the recording start time.
- 13 Press ► to select the recording speed (AUTO/SP/LP).
- 14 Press the ▲ or ▼ button to switch between the **AUTO**, **SP** (standard Play), **LP** (Long Play) recording speeds.
- 15 Press ► to select the VPS or PDC (V/P) recording mode.
- 16 Press the ▲ or ▼ button to toggle between the VPS or PDC mode (marked **ON**) and the non-VPS/PDC mode (marked -).
- 17 To set another timer programme, press ► button to go to next line and follow steps 3 to 16.
- 18 When you have finished, press the MENU button.
- 19 Press the two **TIMER** button to activate the timer.
Note: If you wish to turn the timer off any reason simply press the two **TIMER** button again.
Result: Before starting recording, the VTR compares the timer duration with the remaining time on the cassette.



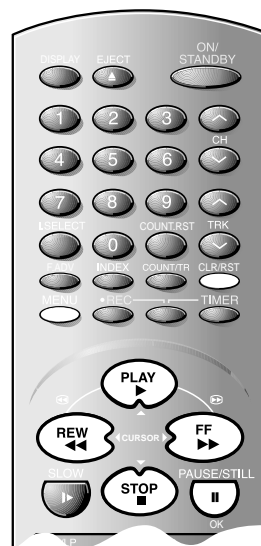
RECORDING

Checking a Preset Recording

You can check your preset recordings:

- ♦ When you have finished presetting the VTR
- ♦ If you have forgotten which programmes will be recorded
- ♦ Before the VTR enters the timer standby mode

Checking a Preset Recording



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the OK button to select this option.
Result: The **TIMER PROGRAMMING** menu is displayed.
- 3 Press the ▲ or ▼ buttons to select the required programme.
- 4 Press the ◀ or ▶ button to select and change any values as required. For more details, refer to the previous page.
- 5 On completion, press. MENU.

Cancelling a Preset Recording

- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the OK button to select this option.
Result: The **TIMER PROGRAMMING** menu is displayed.
- 3 Select the programme to be cancelled by pressing the ▲ or ▼ button.
- 4 Press the CLR/RST button to cancel the selected programme.
Result: All the recording information is deleted and the broadcast will not be recorded.
- 5 On completion, press. MENU.

You can cancel any programmes that are :

- ♦ Incorrect
- ♦ No longer required

RECORDING

Advance Recording Feature

This function allows you to start a new recording at a specific position on the cassette while maintaining a very smooth scene change.

Using the Assemble Edit Function



A smooth edited scene will only be achieved if there are of the same video system.

- 1 Insert the cassette to be edited in your VTR.
- 2 Press the PLAY (▶) button to start playback.
- 3 When you reach the position from which you wish to start the new recording, press the PAUSE/STILL (⏸) button.
- 4 Press the F.ADV button as often as necessary to advance frame by frame, until the exact recording position is located.
- 5 While the VTR is in still mode, press the two REC buttons to activate the assemble Edit function.
- 6 Select the source from which you wish to record by pressing:
 - ♦ The CH (▲ or ▼) buttons for television channels.
 - ♦ The I.SELECT button for the AV1 or AV2 input sources.
- 7 Press the PAUSE/STILL (⏸) button to start recording.
- 8 When you have finished recording, press STOP (■).

Recording from Another VTR or Camcorder



You can copy a cassette to your VTR from another video source, such as another VTR or a camcorder.

Note : It is an infringement of copyright laws to copy prerecorded cassettes or to re-record them any from without the permission of the owners of the corresponding copyright.

- 1 Connect the VTR, from which the cassette is to be copied, to the appropriate SCART audio and video input connectors on the rear of your VTR.
- 2 Insert a blank cassette in your VTR.
- 3 Insert the pre-recorded cassette in the other video source (VTR or camcorder).
- 4 Press the I.SELECT button to select the appropriate input on your VTR :
 - ♦ AV1 or AV2 for the SCART input.
- 5 Start playing back the cassette to be copied.
- 6 Press the two REC buttons to start recording on your VTR.
- 7 When you have finished recording, press STOP (■) on both VTRs.

RECORDING

Advance Recording Feature continued

With the Audio Dubbing function, you erase the previously recorded sound and replace it with a new soundtrack from :
♦ Another suitable equipment

Audio Dubbing a Pre-recorded Cassette



Restriction :
Audio dubbing is applicable only to the longitudinal audio track (normal audio).

- 1 Connect suitable equipment e.g. cassette recorder to the LINE IN 1 on the rear of the VTR.
- 2 Insert the tape to be OVER-DUBBED (the tape with the new audio track to be recorder onto).
- 3 Find the scene that you want to over-dub and press PAUSE/STILL on the remote control.
- 4 Press the A.DUB (audio dub) button on the remote control. (The screen may flicker, this is normal).
- 5 Press the PAUSE/STILL button again to start both the playback and the Audio dub record.
- 6 Play the sound from the external equipment.
- 7 When listening to the tape, use the AUDIO button to select the required option.

See page 43 for the selection soundtracks.

RECORDING

Advance Recording Feature continued

VPS/PDC Default



Programme VPS/PDC is a system of telling the VTR when a programme actually starts. Typically, when you want to record a programme you will tell the VTR to start recording, probably, five minutes before the advertised starting time of the programme and to finish ten minutes or so after the programme is due to finish. So even if the programme starts early or finishes late you will normally still get to see what you wanted to record. However when live programmes over-run or the day's television schedule is changed from that advertised, you may miss the desired programme which may have been delayed or even cancelled. With VPS/PDC the VTR will wait until the signal is sent to confirm the programme is starting and the VTR will record the programme even if it is two or more, hours late.

- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **EASY OPERATION** option.
- 3 Press OK button to select this option.
Result : The **EASY OPERATION** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons until the **PDC/VPS DEFAULT** option is selected.
- 5 Press ▶ button to select **ON** in **PDC/VPS DEFAULT** option.
- 6 On completion, press MENU twice to exit the menu.

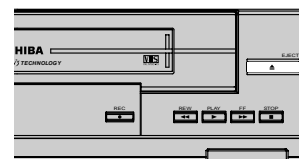
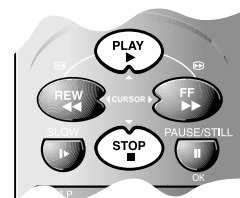


BASIC OPERATION

Playing back

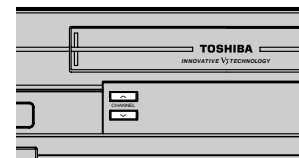
This function allows you to play back any pre-recorded cassette.

Playing a Cassette



- 1 Switch on both the television and your VTR.
- 2 Insert the video cassette to be played. If the safety tab on the cassette is intact, press PLAY (▶).
Otherwise, the cassette is played automatically.
Note : When a cassette is loaded, the tape position is optimized automatically to reduce disturbance (Digital Auto Tracking). When playing a cassette, if the end of the tape is reached, the cassette is rewound automatically. NTSC tapes can be played back but cannot be recorded with this VTR.
- 3 To..
Stop the playback
Eject the cassette
Then pres...
■ (STOP).
▲ (EJECT).

Adjusting Picture Alignment Manually



The Picture Alignment feature allows you to adjust the alignment manually to obtain the best possible picture.

When noise bars or streaks appear during playback, adjust alignment manually by pressing the TRK (▲ or ▼) buttons until the picture is clear and stable.

Result : The tracking bar appears.
The image is adjusted.
The tracking bar disappears when you release the button.

As each VTR is different, slight adjustments need to be made in the way the tape is read. This is called 'Tracking'. When playback starts the video recorder automatically adjusts the Tracking to obtain the best possible picture and sound. Digital Auto Tracking. The "AUTO" indicator will flash while this adjustment takes place and the playback picture and sound may be distorted. The VTR will automatically adjust the Tracking as best it can. If you playback rented tapes or tapes recorded on other machines, you may occasionally find that the Digital Auto Tracking is not able to improve the picture sufficiently. In these instances you will need to adjust the Tracking manually.

With a tape in and playing, hold down either the TRK (▲ or ▼) button on the remote control until the best possible picture and sound is obtained

To resume Automatic Digital Tracking, press the two CHANNEL buttons on the front of the VTR at the same time until the AUTO light comes on.

If the tape is old or worn, it may be impossible to improve the picture performance. If you press the PAUSE/STILL button the image may shimmer. This can also be reduced by adjusting the Tracking.

BASIC OPERATION

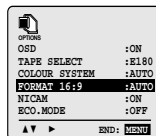
Playing back continued

You VTR can automatically read a 16:9 signal from the AV2 input or a prerecorded 16:9 tape. It can broadcast a 16:9 signal through a 21 pin scart cable.

Format 16:9 (Wide Screen)



- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press OK button to select this option.
Result : The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons until the **FORMAT 16:9** option is selected.



- 5 Press ▶ button to select **AUTO → ON → OFF**.

AUTO	Set when you used a wide TV. The VTR detects wide TV Programmes and normal TV programmes Automatically when playing back and recording.
ON	The VTR always plays back and records in the mode compatible with 16:9 wide screen. Set if the VTR cannot detect wide TV programmes with "AUTO" set.
OFF	Set if you do not use a wide TV.

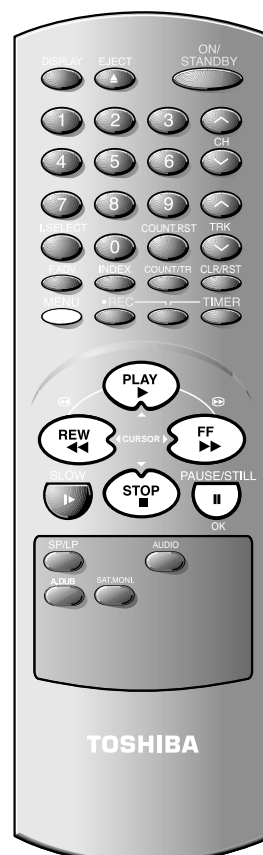
- 6 On completion, press MENU twice to exit the menu.

BASIC OPERATION

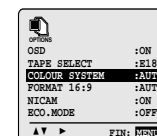
Selecting the Colour Mode

Before recording or playing back a cassette, you can select the required system standard. Otherwise, the system automatically select the reception standard when you select AUTO.

Selecting the Colour Mode



- 1 Press MENU on the remote control.
Result : The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press OK button to select this option.
Result : The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons until the **COLOUR SYSTEM** option is selected.



- 5 Press ▶ button to select **AUTO → PAL → B/W**.

AUTO	When playing back a cassette, the system standard is automatically selected by the VTR.
B/W	Black and White

- 6 On completion, press MENU twice to exit the menu.

Note:

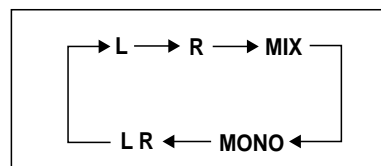
- ♦ When playing back a cassette, the standard is automatically selected by the VTR.
(Even though you already selected a manual system)
- ♦ When you playback an NTSC-recorded tape on this VTR make a setting on the colour system according to your TV. If your TV is a PAL system only TV, set NTPB. If your TV is Multi system TV (NTSC 4.43 compatible), set NT 4.43 and you can record NT 4.43.

BASIC OPERATION

Selecting the Audio Output Mode

You can select the mode in which the sound is reproduced on the loudspeakers and AV outputs. The following options are available.

Selecting the Audio Output Mode



Option	Description
L	Used to listen to the sound on the left Hi-Fi channel
R	Used to listen to the sound on the right Hi-Fi channel
MIX	Used to listen to the mixed sound of the Hi-Fi and normal channels.
MONO	Used to listen to the sound on the normal mono channel.
LR	Used to listen to Hi-Fi stereo sound on the left and right channels. Note : When playing back tapes recorded in Hi-Fi, the sound switches to Hi-Fi after five seconds of Mono.

BASIC OPERATION

Searching for a Sequence

You can play a cassette in slow motion.
Note : No sound is heard when playing back a cassette in slow motion

Playing a Cassette in Slow Motion



- Press :
 - PLAY (▶) to start playing the cassette
 - SLOW (⏮) and release the SLOW (⏮) button on the remote control. If you press the SLOW (⏮) button twice, the playback will SLOW down to 1/12 th of normal speed.
 - To return to the normal speed, press PLAY (▶) button.
- When playing back in slow motion, picture interference may occur. Press the TRK (⏮ or ⏭) button to minimize this effect.

Note : When you have been using the Slow Motion function for more than about five minutes, the VTR will automatically play to protect the :

- Cassette
- Video head

Playing a Sequence Frame by Frame



You can :

- Stop the cassette at a given frame (image)
- Advance one frame at a time

Note : No sound is heard when playing back frame by frame

- Press :
 - PLAY (▶) to start playing the cassette
 - PAUSE/STILL (⏮) to stop the tape at given frame
 - F.ADV to advance frame by frame
- To return to normal, press PAUSE/STILL (⏮).

Note : When you have been using the Frame-by-Frame function for more than about five minutes, the VTR will automatically play to protect the Cassette and Video heads.

BASIC OPERATION

Picture Search, Fast Forward/Rewind

Picture Search enables you to Fast Forward or Rewind and look for a particular part of a tape.

Picture Search, Fast Forward/Rewind



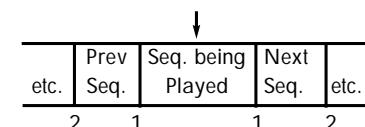
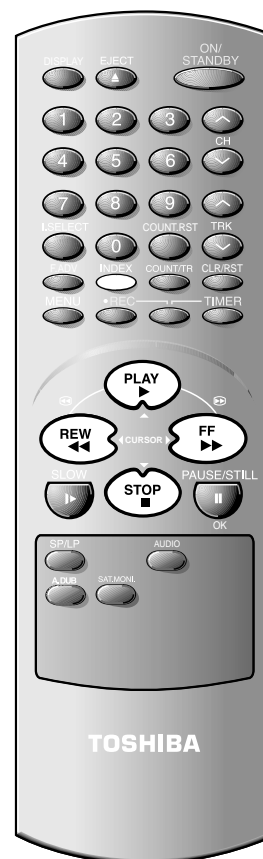
- 1 Press PLAY, the VTR will enter normal play mode. While in play press and release the FF (or REW) button. The VTR will search at 5 times the normal playback speed.
- 2 To return to normal playback mode, press the PLAY (▶) button.
- 3 If you press and HOLD down the FF (or REW) button the VTR will search at 9 times the normal speed. Releasing the FF (▶) button will return the VTR to search at 5 times the normal speed. To return to normal playback mode, press the PLAY (▶) button.
- 4 Whilst in Picture Search mode, if you press the FF (▶) button again, the VTR will enter normal Fast-Forward mode.
- 5 Likewise, whilst in Picture Search REW mode, if you press the REW (◀) button again, the VTR will enter normal Rewind mode.
- 6 If, when Redwing (REW) or Fast Forwarding (FF), you press the REW (or FF) button, the VTR will enter the Picture Search mode.

BASIC OPERATION

Searching for a Specific Sequence

Each time you record a cassette on this VTR, an "index" is automatically marked on the tape when recording starts. The Search function allows you to fast-forward or rewind to a specific index and start playback from that point. Depending on the direction selected, the indexes are numbered as follows:

Searching for a Specific Sequence



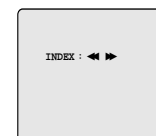
INTRO SCAN

- 1 To search for a specific index, press INDEX.
- 2 Press the REW (◀) or FF (▶) buttons depending on the direction where your desired programme is located.
- 3 When an index mark is found the VTR will playback the tape for 5 seconds, after which it will continue searching for the next Index mark.
- 4 If you want to watch the tape from a particular Index, simply press PLAY.

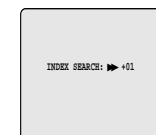
Index Skip Search :

This feature will enable you to fast forward/rewind to a specific point on a tape : E.g. If you have recorded 3 different programmes on a tape and you have rewound the tape to the beginning, by using this feature you can go directly to the start of programme 2 simply by pressing the INDEX button.

- 1 Press the INDEX to start the Index search.



- 2 Press the REW (◀) or FF (▶) buttons twice more. This will take you directly to the desired programme is located.



- 3 These Index searches can be made forwards: (press ▶) or backwards: (press ◀).
- 4 To cancel an Index search simply press the PLAY or STOP button.

BASIC OPERATION

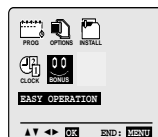
Auto Repeat Play

You can set repeat play to repeat the tape continuously from beginning to end.

Auto Repeat Play



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **EASY OPERATION** option.
- 3 Press the OK button to select this option.
Result: The **EASY OPERATION** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **REPEAT PLAY** option is selected.
- 5 To...
Repeat play
Do not wish to repeat play
Press ◀ or ▶, until...
ON is displayed
OFF is displayed
- 6 On completion, press MENU twice to exit the menu.

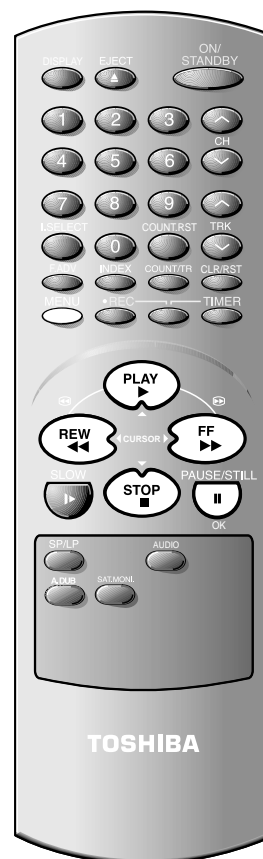


ADDITIONAL FUNCTIONS

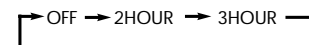
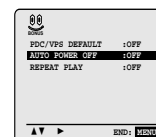
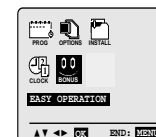
Other Function and Useful Recommendations

The Auto Power Off feature automatically turn off your VTR if no signal is received and you do not press any button for the selected time.

Auto Power Off



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **EASY OPERATION** option.
- 3 Press the OK button to select this option.
Result: The **EASY OPERATION** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **AUTO POWER OFF** option is selected.
- 5 Press the ▶ button, until you select the time of Auto Power Off interval.
- 6 On completion, press MENU twice to exit the menu.



ADDITIONAL FUNCTIONS

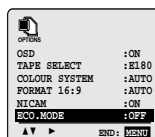
Other Function and Useful Recommendations continued

Low Power Mode reduces the Standby power consumption of the VTR when is Standby mode. Useful, for example, when you are away from the house on holiday. It saves actually turning the VTR off.

ECO Mode-Reducing Standby power consumption



- 1 Press MENU on the remote control.
Result: The programming menu is displayed.
- 2 Press the corresponding ▲, ▼ or ◀, ▶ buttons to select the **USER SET** option.
- 3 Press the OK button to select this option.
Result: The **USER SET** menu is displayed.
- 4 Press the corresponding ▲ or ▼ buttons, until the **ECO. MODE** is selected.
- 5 Press the ▶ button to turn LOW (3Watts) mode on. Now, when the VTR is standby mode the front display panel will shut off. Even the clock disappears. By pressing the ON/STANDBY button again the display panel will reappear.
- 6 On completion, press MENU twice to exit the menu.



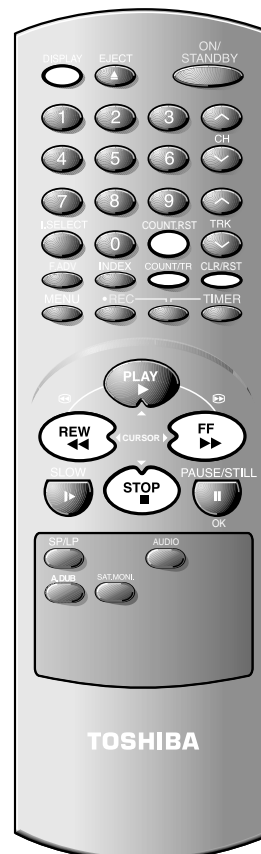
ADDITIONAL FUNCTIONS

Using the tape Counter

The tape counter :

- ♦ Indicates the elapsed time in the play and record modes (hours, minutes and seconds)
- ♦ Is reset when a cassette is inserted in the VTR
- ♦ Allows you to find the beginning of a sequence easily.

Using the Tape Counter



- 1 Insert a cassette in your VTR.
- 2 To set the tape counter to zero at the beginning of a sequence:
 - ♦ Press DISPLAY twice to display the counter
 - ♦ Press CLR/RST when you want to set the tape counter to zero
- 3 When you are ready,
 - ♦ Start playback or Recording
 - ♦ Press the STOP button.
 - ♦ To fast-forward or rewind to the sequence at which the counter was set to zero, press REW (◀◀) or FF (▶▶).

Note:

Some VTR information, such as the counter, can be displayed on the television screen (unless you have deactivated the OSD mode; refer to page 14).

Press DISPLAY :

- ♦ Once to display the current function, programme number, recording, speed, date, time and counter
- ♦ Twice to display the counter only
- ♦ Three times to display the time remaining on the cassette
- ♦ Four times to clear the display.

Press COUNT/TR

- ♦ Once to display the counter
 - ♦ Twice to display the time remaining on the cassette
- To fast-forward or rewind to reach the tape end or start position the counter display has to clear.

46 ADDITIONAL FUNCTIONS

TV Frequency table (System-I)

TV Frequency Table

002-012 :CCIR STD VHF
013-020 :ITALY
021-069 :CCIR STD UHF
071-075 :CCIR CABLE
201-241 :CCIR STD CABLE

244-250 :MOROCCO
251-255 :BELGIUM

Germany
Spain
Italy
Austria
Switzerland

Netherlands
Denmark
Finland
Norway
Sweden

Belgium
Greece
Portugal
Slovenia
Croatia

Morocco
Yugoslavia

DISP	CH	Band	Fp	STD	DISP	CH	Band	Fp	STD	DISP	CH	Band	Fp	STD
002	E02	V-L	48.25	CCIR	060	E60	UHF	783.25	CCIR	151	01	V-L	43.25	Angola
003	E03	V-L	55.25	CCIR	061	E61	UHF	791.25	CCIR	152	02	V-L	52.25	Angola
004	E04	V-L	62.25	CCIR	062	E62	UHF	799.25	CCIR	153	03	V-L	60.25	Angola
005	E05	V-H	175.25	CCIR	063	E63	UHF	807.25	CCIR	154	04	V-H	175.25	S/Afr
006	E06	V-H	182.25	CCIR	064	E64	UHF	815.25	CCIR	155	05	V-H	183.25	S/Afr
007	E07	V-H	189.25	CCIR	065	E65	UHF	823.25	CCIR	156	06	V-H	191.25	S/Afr
008	E08	V-H	196.25	CCIR	066	E66	UHF	831.25	CCIR	157	07	V-H	199.25	S/Afr
009	E09	V-H	203.25	CCIR	067	E67	UHF	839.25	CCIR	158	08	V-H	207.25	S/Afr
010	E10	V-H	210.25	CCIR	068	E68	UHF	847.25	CCIR	159	09	V-H	215.25	S/Afr
011	E11	V-H	217.25	CCIR	069	E69	UHF	855.25	CCIR	160	10	V-H	223.25	S/Afr
012	E12	V-H	224.25	CCIR	071	X	V-L	69.25	CCIR	161	11	V-H	231.25	S/Afr
013	A	V-L	53.75	Italy	072	Y	V-L	76.25	CCIR	162	13	V-H	247.45	S/Afr
014	B	V-L	62.25	Italy	073	Z	V-L	83.25	CCIR	201	R1	V-L	49.75	OIRT
015	C	V-L	82.25	Italy	074	Z+1	V-L	90.25	CCIR	202	R2	V-L	59.25	OIRT
016	D	V-H	175.25	Italy	075	Z+2	V-L	97.25	CCIR	203	R3	V-L	77.25	OIRT
017	E	V-H	183.25	Italy	101	S01	V-L	105.25	CCIR	204	R4	V-L	85.25	OIRT
018	F	V-H	192.25	Italy	102	S02	V-L	112.25	CCIR	205	R5	V-L	93.25	OIRT
019	G	V-H	201.25	Italy	103	S03	V-L	119.25	CCIR	206	R6	V-H	175.25	OIRT
020	H	V-H	210.25	Italy	104	S04	V-L	126.25	CCIR	207	R7	V-H	183.25	OIRT
021	E21	UHF	471.25	CCIR	105	S05	V-L	133.25	CCIR	208	R8	V-H	191.25	OIRT
022	E22	UHF	479.25	CCIR	106	S06	V-L	140.25	CCIR	209	R9	V-H	199.25	OIRT
023	E23	UHF	487.25	CCIR	107	S07	V-H	147.25	CCIR	210	R10	V-H	207.25	OIRT
024	E24	UHF	495.25	CCIR	108	S08	V-H	154.25	CCIR	211	R11	V-H	215.25	OIRT
025	E25	UHF	503.25	CCIR	109	S09	V-H	161.25	CCIR	212	R12	V-H	223.25	OIRT
026	E26	UHF	511.25	CCIR	110	S10	V-H	168.25	CCIR	244	M4	V-H	163.25	Morocco
027	E27	UHF	519.25	CCIR	111	S11	V-H	231.25	CCIR	245	M5	V-H	171.25	Morocco
028	E28	UHF	527.25	CCIR	112	S12	V-H	238.25	CCIR	246	M6	V-H	179.25	Morocco
029	E29	UHF	535.25	CCIR	113	S13	V-H	245.25	CCIR	247	M7	V-H	187.25	Morocco
030	E30	UHF	543.25	CCIR	114	S14	V-H	252.25	CCIR	248	M8	V-H	195.25	Morocco
031	E31	UHF	551.25	CCIR	115	S15	V-H	259.25	CCIR	249	M9	V-H	203.25	Morocco
032	E32	UHF	559.25	CCIR	116	S16	V-H	266.25	CCIR	250	M10	V-H	211.25	Morocco
033	E33	UHF	567.25	CCIR	117	S17	V-H	273.25	CCIR	251	U1	V-H	226.25	Belgium
034	E34	UHF	575.25	CCIR	118	S18	V-H	280.25	CCIR	252	U2	V-H	234.25	Belgium
035	E35	UHF	583.25	CCIR	119	S19	V-H	287.25	CCIR	253	U3	V-H	242.25	Belgium
036	E36	UHF	591.25	CCIR	120	S20	V-H	294.25	CCIR	254	U4	V-H	250.25	Belgium
037	E37	UHF	599.25	CCIR	121	S21	V-H	303.25	CCIR	255	U5	V-H	258.25	Belgium
038	E38	UHF	607.25	CCIR	122	S22	V-H	311.25	CCIR					
039	E39	UHF	615.25	CCIR	123	S23	V-H	319.25	CCIR					
040	E40	UHF	623.25	CCIR	124	S24	V-H	327.25	CCIR					
041	E41	UHF	631.25	CCIR	125	S25	V-H	335.25	CCIR					
042	E42	UHF	639.25	CCIR	126	S26	V-H	343.25	CCIR					
043	E43	UHF	647.25	CCIR	127	S27	V-H	351.25	CCIR					
044	E44	UHF	655.25	CCIR	128	S28	V-H	359.25	CCIR					
045	E45	UHF	663.25	CCIR	129	S29	V-H	367.25	CCIR					
046	E46	UHF	671.25	CCIR	130	S30	V-H	375.25	CCIR					
047	E47	UHF	679.25	CCIR	131	S31	V-H	383.25	CCIR					
048	E48	UHF	687.25	CCIR	132	S32	V-H	391.25	CCIR					
049	E49	UHF	695.25	CCIR	133	S33	V-H	399.25	CCIR					
050	E50	UHF	703.25	CCIR	134	S34	V-H	407.25	CCIR					
051	E51	UHF	711.25	CCIR	135	S35	V-H	415.25	CCIR					
052	E52	UHF	719.25	CCIR	136	S36	V-H	423.25	CCIR					
053	E53	UHF	727.25	CCIR	137	S37	UHF	431.25	CCIR					
054	E54	UHF	735.25	CCIR	138	S38	UHF	439.25	CCIR					
055	E55	UHF	743.25	CCIR	139	S39	UHF	447.25	CCIR					
056	E56	UHF	751.25	CCIR	140	S40	UHF	455.25	CCIR					
057	E57	UHF	759.25	CCIR	141	S41	UHF	463.25	CCIR					
058	E58	UHF	767.25	CCIR	142	1A	V-L	42.25	Indonesia					
059	E59	UHF	775.25	CCIR	143	01	V-L	45.25	Naz					

ADDITIONAL
FUNCTIONS